23

Cholera Infantum No. 5

Wm. Gwathmey

admitted March 11. 1819

An Essay on Cholera Infantum.

Considering the very accurate and minute history of this disease with which the medical world has been furnished by the learned Doctor Rush, it may be deemed presumptuous in a youthful cultivator of the science to attempt any addition to his very valuable publication; indeed candour urges me to confess that in selecting it as the subject of an inaugural essay I have no expectation of offering a more faithful account of its symptoms than he has detailed, but having enjoyed in the situation which I have the good fortune to occupy considerable opportunity of witnessing this destructive complaint in all its various stages, the efficacy of the means employed to arrest its progress and the appearances on dissection of the dead subject, I have thought it perhaps more conducive to the advancement of medicine to give a plain unpolished detail of facts which have come under my observation, than to make a vain effort to elucidate and establish any favorite physiological theory. From the comparative result of the practice which has been pursued I am also inclined to believe it will be found more successful than that recommended by the writers on this disease.

Cholera appearing in children is first particularly noticed by

Cleghorn in his treatise on the diseases of Minorca, but almost every practical writer has described it occurring in adults, and we know that cholera morbus and Infantum are attended with so many corresponding symptoms and indications that a description of one is in many respects applicable to the other. Celsus* has described this disease with much correctness, nor has it escaped the observation of Sydenham†; he speaks in a more particular manner of the complaint among children. In our own country, to which it has been said to be endemic, Doctors Rush, Miller, Jackson and Mann, have given us much information on the subject.

Various causes have been assigned for the production of Cholera Infantum. Dr. Rush I think has satisfactorily refuted the several suppositions of its having its origin in "dentition, worms and summer fruits", but I confess I do not feel warranted in concurring with him in ascribing it to a "superabundance of bile in the system", on the contrary from the condition of the liver as displayed in two of three cases of dissection, hereafter to be detailed, it appears that there really had existed (as expressed by Dr. Mann of Mass.) "a torpor of that viscus", at least nothing indicates the preexistence of any inordinate action. Suppressed perspiration, dentition, worms, unripe fruits or other improprieties of diet, and a superabundance of bile may be considered the <u>occasional</u> or <u>exciting</u> causes, but the <u>predisposition</u> I think consists in the debility induced by the operation of a heated atmosphere rendered impure by local filth or other adventitious circumstances. The belief of its bilious charac-

* page 143. lib. IV
† page 443

ter is stated to be founded on the appearance of the evacuations and the condition of the liver on examination; this is described as being "universally enlarged and altered in structure". Whatever may have been revealed by the dissections of others I have not found this derangement to exist in two patients who had fallen victims to well defined Cholera Infantum. It may be proper to remark that I was assisted in these dissections by my colleagues in the almshouse and that they were made at a time when I had but little expectation of ever transcribing them from the Register of Cases.

In every instance the stomach exhibited strong marks of inflammation, which was slightly apparent in various portions of the intestinal canal; the liver in one case which had been of near three weeks' duration was very much enlarged and pale coloured, but in the other two, both of which had been equally protracted, it was perfectly natural in size, colour and structure. All other parts of the body seemed to have been exempt from the influence of the disease except the brain; here the strong adhesion between the dura mater and cranium, the vessels turgid with blood, the deposition of coagulated lymph between the membranes, the serous effusions in the ventricles, all strikingly evinced the close sympathy existing between this organ and the stomach.

The circumstances "disposing" Doctor Rush to consider this disease a modification of bilious fever are the discharge of bile, the remissions and exacerbations of the fever which accompanies it and its occurring nearly at the same season with bilious

fever." It is not because favorable to my supposition, or that I believe bile is never ejected (though this I am inclined to think does not take place until the operation of vomiting has been performed.) I observe, that every person acquainted with the variously altered secretion of the diseased stomach is aware this not unfrequently assumes the appearance of bile (as in yellow fever for example;) the alvine evacuations also are often so copious and of a nature so unlike bile we can hardly attribute them to an increased secretion of this fluid; and it is scarcely necessary to remark we have numerous diseases (as that produced by the presence of worms) attended with regular paroxysms of fever in which no suspicion of a bilious character is entertained; nor does this disease yield to the ordinary remedies for bilious fever.

Practical experience and the appearances on dissection induce me to concur with those who believe cholera Infantum, at least originally, a purely gastric affection produced by the excessive excitement of heat. It has been observed by practitioners that the disease is more prevalent and attended with greater fatality in proportion to the intensity of the summer heat. Of the truth of this observation we were furnished with a convincing proof during the past summer in Philadelphia; several physicians have informed me that cases of the complaint occurred more frequently in their practice than in several preceding seasons. We have the testimony of Cleghorn in corroboration of this observation; we learn

from his work† that not only its prevalence and fatality were proportionate to the degree of temperature but also that the time of its appearance every year was dependant upon the recurrence of this cause. In ordinary years we are informed it commences in the Island of Minorca about the 1st June; in the United States it advances from the South towards the north, seeming evidently to depend upon the same temperature and state of the atmosphere for its production. In Charleston according to Doctr Rush it appears in april, in Philadelphia about the middle of June; in norfolk it is rarely observable before the beginning of May, and Doctor Jackson tells us it is prevalent in Boston about the middle of July.

Though occuring most frequently in large cities the disease is not unknown in country situations, nor are its symptoms and progress here less malignant than in the former. A respectable medical friend informs me that it prevailed in the lower counties of Virginia to a very considerable extent during the last summer, especially among the coloured children. I do not recollect having seen but one case in the country since engaged in the study of medicine, having passed the time principally with my preceptor in Norfolk, nevertheless I know well that "the summer complaint of children" is the exciter of much anxiety and dread in the minds of most Virginia mothers at this season.

The symptoms are enumerated with great accuracy by that

† page 142

minute observer of disease, Doctor Rush, but as I design giving only the result of my own observation I will forbear transcribing his appropriate language.

There occured in the alms-house about twenty six cases of the disease during the summer; the subjects of these were from near birth to four years of age, though most commonly it attacked those under eighteen months. In some instances the attack was preceed by languor and listlessness, with headache, and more than ordinary loosenss of the bowels had been observed for some days previous, but more generally it came on suddenly during the night without any premonitary symptoms, often supervening a hearty meal. It was almost invariably accompanied with fever of a remitting type, the exacerbations taking place most frequently in the evening. The vomiting and purging simultaneously ushered in the paroxysm, the vomiting usually abating during the remission, the purging continuing undiminished. The matter vomited consisted mostly of the substances taken into the stomach, the dis-charges per anum were most commonly in the commencement of a yellowish coloured, thin fluid with small lumps of deep green matter of more solid consistence and very fœtid, becoming paler as the disease advanced, but I have seen them retain their first character as long as the disease continued. The tongue in some patients quickly became incrusted with a yellowish white scurf with small pustules on its edges, in others it remained

throughout clear and pale colour as in dropsy. The surface during the paroxysm is hot and dry, but afterwards of irregular temperature, the head more especially being excessively hot, as well as the epigastrium and trunk, while the extremities even to their junction with the body are cold and dry, the capillary vessels seeming to have lost all their action. The pulse during the paroxysm is small, quick and of more than natural force, in the remission small frequent and weak, sometimes intermittent. An insatiable thirst for cold drinks was not unfrequently met with; these I observed were often best retained. Pressure on the abdomen occasions pain, the knees are drawn up to the breast. In the absence of the vomiting and purging the lid the sufferer lies exhausted and inanimate, the countenance haggard and collapsed; the eyes half closed; or in the latter stage sunk and hollow, supplicate relief. After a few paroxysms the determination to the head became most evident from the excessively heated forehead, the dilated and irregular pupil, warnings of the threatened effusion in the brain.

The disease was generally checked by the third day, though the diarrhoea continued sometimes for several weeks, when great emaciation was produced, very slight causes now exciting a renewal of the attack.

Treatment. When called early and having reason to believe from the nature and quantity of the matter vomited that the stomach is much loaded, a prompt emetic of Ipecac.a

or the very copious use of some diluent drink to remove the cause of irritation would undoubtedly be the appropriate remedy, but for the purpose of evacuation we generally resorted to calomel purges very freely administered. The first endeavour was to check the vomiting, which was invariably I believe, speedily effected by the immediate employment of the warm bath, lime water & milk and a sinapism to the epigastrium; then the use of the Calomel was commenced, usually alone in doses of three or four grains repeated every second or third hour, untill from the altered character of the stools we were convinced that the accumulated sordes were discharged. In 24 or seven hours after the first administration of the mercurial cathartics they were succeeded by a dose of oil or a mixture of Calcined magnesia and Rhubarb. By the above remedies with a repetition of the warm bath and some diaphoretic in the evening many cases were effectually checked in their commencement.
The alimentary canal being well cleansed, external irritants were next applied, indeed these were much relied upon in every condition of the patient, both during the paroxysm and remission of the fever. The means usually employed were the hot bath rendered more stimulating by having common salt, Cayenne pepper or mustard infused in it, sinapisms to the epigastrium and extremeties, and in the more advanced stage blisters to the wrists. as belonging to this class may also be enumerated the flannel rollers around the extremeties and body of the patient. In a few cases after the vomiting and purging had continued for

some time, the matter now discharged being little else than the fluids swallowed, we were induced to believe that evacuating medicines would most probably increase the irritation, consequently these were abandoned and external irritants alone resorted to, allowing only a small quantity of some demulcent beverage. The propriety and efficacy of this practice is exemplified in case 4th.
It was rarely found necessary to recur to the employment of purges a second time; perhaps they should never be repeated unless from the pale coloured alvine discharges in the diarrhœa which is so frequently protracted, or from the enlargement of the liver which may in most patients be ascertained by the hand, we suspect a chronic inflammation of this gland; under such circumstances, the cautious administration of Calomel in combination with opium and Ipecac.a I believe would prove very beneficial, having witnessed the fatal neglect of it I think in one patient.
The evacuations from the bowels are often accompanied with tormina and tenesmus, the child expresses its sufferings by writhing its body, clenching its hands and incessant crying. To relieve these anodyne injections were prescribed with good effect. They should be repeated every two or three hours.
With the intention of giving tone to the debilitated stomach and thereby to remove the tendency to diarrhœa, astringents and tonics were employed; of the former we had abundant reason to be pleased with the effect of the decoction of Logwood & Gum arabic with a small quantity of Tinct: opii, the cretaceous julep &c

given immediately after each stool, and of the latter we used with most advantage the Comp.d Tinct. Gentian combined with mucilage and sweetened in small and frequently repeated doses.

It is not to be wondered at when we contemplate the rapid and widely extended ravages of this disease that remedies for its cure should have been greatly multiplied; every author whom I have consulted has his favorite prescription which is recommended to public confidence in terms of extravagant praise. I content myself with cursorily noticing the principal of these. The practice advised by Celsus[x], Sydenham[T] and Cleghorn[I] consists in the administration of demulcent tisans to assist in the evacuation of the stomach, the free use of opium to quiet irritation and frictions with hot oil, the frequent use of the warm bath &c. A combination of Calomel & opium formed the chief prescription of Doctr. Miller, and of calomel & Ipecac.a of Doctr. Jackson. "The Spanish physicians" says Cleghorn "place much reliance in draughts of cold water and injections of the same."

From the evident advantage I have known to result from the application of a blister to the back of the neck in other infantile diseases attended with fever where there existed a great determination to the head, I am disposed to think very favorably of this remedy under similar circumstances in cholera. In the case of a little girl affected with worms, in whom the fever had been protracted for seven or eight days, I have strong reason to believe a blister to the back of the neck prevented effusion into the ventricles, after

x page 143. 4
T - 443
I - 242.

the pupils had become very much dilated and unequal in size. The head here as in Cholera Infantum and other cases of great irritation in the alimentary canal I considered sympathetically affected, but not on that account undeserving our attention, though the primary cause must be removed. In the case above alluded to while continuing the anthelmintic medicines, appropriate ones were addressed to the head, and thus the more imminent danger was warded off until the full effect of those given for the expulsion of the worms might be exerted.

A change of air, exercise in a carriage or boat, the motion of which has been thought peculiarly serviceable, I have every reason to believe very important remedies; as the best substitute for these I had it in my power only to direct the nurse to send the children into the yard for half an hour every morning and evening.

Those children who had once suffered from an attack of cholera were peculiarly liable to a relapse; to prevent this the daily administration of the cold bath, strict attention to cleanliness, a diet principally of milk and farinaceous articles and warm clothing proved to be the most valuable prophylactics.

The practice as detailed I will now more minutely illustrate by a few selected cases.

August 9th 1818. Eliza Gray, aged two months and five days, was attacked last night with Cholera. Her mother had previously observed no diarrhoea or disorder of any kind; the vomiting came

on late in the evening and was attended with very high fever. She had rejected every thing from her stomach, and almost every ten minutes her linen was soiled with a dark green discharge from the anus. There is much febrile commotion, her skin is excessively hot and dry, her pulse quick and frequent, and her stomach exhibits its great irritability by the frequently repeated attempts to vomit. With the intention of allaying the irritation of the stomach a cataplasm of garlick was applied to the epigastrium and a mixture of lime-water and milk ā ā ℥ij every ten minutes was ordered. To moderate the fervent heat of the surface she was sponged all over with cold water and vinegar. By these means the desired effect was soon produced; the vomiting entirely ceased and the febrile heat removed from the surface; at noon nothing remained of the disease but the purging of dark, green, viscid matter. The exhibition of Calomel was now commenced, grs. iij q.h. until the nature of the evacuations should become altered. The first three or four doses of this medicine were well retained, the effect on the discharges slightly apparent, but in the latter part of the afternoon an exacerbation of the fever took place and the calomel was immediately followed by vomiting. The surface particularly of the head again became excessively hot. I did not see her until late at night when the violence of the paroxysm had abated; she vomited but once in two hours, and her skin was beginning to lose its heat; the purging was less frequent, and her pulse beat with much less rapidity than in the former paroxysm.

She was wrapped in flannel and a mixture of Spt. nitr. Dulc., vin: Ipecac. & Tinct. opii Camphorat: prescribed. This produced considerable perspiration, which gave much relief. At 7 o'clock next morning there was very little fever present, yet she vomited and discharged per anum very frequently. A sinapism was applied to the epigastrium and a mixture of Calcin: magnes. & Rhei directed, to be given in very small doses suspended in mucilage and sweetened.

At 11 O.C. the attending physician, Doctor Klapp saw the child and advised the warm bath & blisters to the wrists, and mucilage of Gum Arab: with brandy ℥ij to ℥ij sweetened and spiced. In the evening the blisters had drawn well, the bath was again repeated and some relief obtained, the vomiting checked and the surface of more natural temperature.

At 7 O.C. next morning the fever had returned with its severest symptoms and the vomiting as distressing as ever. A hot salt water bath, rendered more stimulating by the addition of ℥ij of Pulverized Mustard and as much Cayenne Pepper was immediately prepared, into which the child was immersed up to the neck and kept three minutes, when the full rubefacient effect being produced she was removed, wiped dry and wrapped in warm flannel. A small quantity of sweetened mucilage was the only article internally exhibited at this period. The fever and all tendency to vomiting subsided after this external irritation; the purging was the only remnant of the disease. The next morning she had no fever; the same bath was repeated, and small &

frequently repeated doses of the following mixture prescribed.
℞. mucilag: G. Arab: ℥viij, Tinct. Gentian: Compos: ℥i Sacch: alb: q.s. m.
The warm bath was ordered to be repeated every night at bed time, and the medicine last mentioned continued. The diarrhœa was thus in a few days removed, and she escaped the disease through the remainder of the season.

Case 2nd George Thompson, aged four years.
Augt. 11th 9 o.c. a.m. had been unwell for two days, he vomited frequently yesterday and voided by stool much yellowish green matter. He is now hot and dry, tongue furred white and his pulse is quick & of considerable force. ℞. Cal: grs x. divid: in Chartul: iij — Nun: sumend: quaq: hor: —
12 o.c. He has retained all the calomel powders, and his bowels have been thoroughly evacuated. ℞. Vin. Ipecacd. ℥ij, Spt. nitr. Dulc. ℥ß mp. — gutt: XV q.s. h: and keep him covered warm.
6 p.m. His fever was returned, the skin is dry and very hot, particularly his head and upper extremities. Ordered him to be well sponged with vinegar & pump water, to be afterwards wiped dry and wrapped in flannel. continue the sudorific mixture. a copious perspiration was excited, the purging moderated.
12th The little boy has slept well, his bowels have remained pretty quiet during the night; he seems quite well, is free of fever. No medicine prescribed, but his mother directed to pay particular attention to his diet; mutton broth, sago &c. to be given him.
13th 8 o.c. a.m. Least night the fever returned and before morning

he began to vomit and purge severely. His skin is now very hot & dry, stools dark green. ℞. Sinapism to Epigastrium, lime water & meth to check the vomiting. At 10 o'c. a.m. the vomiting has abated in violence but there appears to be yet great irritability of the stomach. The skin is dry & harsh, the head much hotter than the other parts of the body. The stimulating salt bath prepared as in the preceding case was resorted to; its irritating effect produced, and a garlick cataplasm was applied to the Epigastrium; the Cretaceous julep with a small portion of Tinct: opii was administered internally ℥ij q.h.

8 p.m. The happy effect of completely checking the vomiting and considerably moderating the purging has followed the use of the last remedies. A demulcent drink of Barley water & Gum arabic was prescribed, and particular directions given to keep him covered up warm.

14th – 8 a.m. The vomiting has not returned; the stools are thick, black and fœtid, but the skin is of more equable and natural temperature. ℞. Cal: grs iij q.h. untill the colour & consistence of the stools are changed. The bath to be repeated. At 6 p.m. the Calomel has operated freely and changed the colour of the stools to a straw yellow. To assist the Cal: in thoroughly changing the stools ℞. Magnes: Calcinat: ℥i Rhei ʒj mucil: ℔. arab: ℥ij Sacch: alb. ℥ij m.p. ℥ß sumend: q.6.h. – 15th The child is entirely free of fever; the bowels opened twice this morning. He appears much weakened and the emaciation has been rapid. ℞ Tinct: Gentian: Comp: ℥ij mucil: ℔. arab: ℥vj sweeten & spice with nutmeg. Give ℥ij q.sem: hor: – Let his diet be

light, of sago, mutton broth, sweetened mucilage &c. These were continued daily; the diarrhoea continued but for a few days, and he no longer required the assistance of medicine.

Case 3rd, exhibiting the practice in the Diarrhoea.

Aug.t 25th. John McGinnie, aged 1 year, was attacked with purging and purging ~~and purging~~ near a fortnight ago. The course of treatment as detailed in the two preceding cases has been pursued with some slight variation, nevertheless a most distressing diarrhoea remains; he has daily eight or ten evacuations, which consist of a pale coloured, thin, fœtid fluid quickly becoming green after it is discharged. He is much emaciated, has no appetite and cries continually.— I directed his mother to put on him a flannel shirt and wooden socks; to give him such as often as he could be made to take the nipple, and ℥ij of the following mixture every second hour. ℞. magnes. calcin: ʒi pulv. Rhei ʒj aqua ℥ij sacch: alb: q.s.

27th— The discharges have continued; this morning they are not so fœtid. I can feel no enlargement of the liver, his skin and eyes are clear; the diarrhoea appears to be continued as much by the effect of habit as of present disease. ℞. Lign: Campech: ℥i. b. arab: ℥ß, aqua lbj. boil x minutes and give him a wine glass full every half hour or hour.

28th. 8 o'c. a.m. He took the decoction very willingly and the purging was suspended during the greater part of the night, but towards morning he became restless and cried; he seemed to suffer very much during the evacuations, has had three this morning. With the intention of relieving the tormina I prescribed the following anodyne injection

ow. ℞. Tinct. opii gtt. XV, mucilag: G. arab: ℥j m. Inject half and the remainder in two hours if the purging does not cease. Continue the decoct. Campech:

29th The alvine discharges are yet frequent, but have not been attended with so much pain. ℞ cret: praepar: ʒij aq. mench: piper: ℥iv. Tinct. opii gtt. XX saech: alb: ʒij m. Give two Tea spoonfuls after every stool. I should here have used the Bubus Decumb:, but we had none in the Apothecary's Shop. Continue the decoct. Campech: and G. arab:

30th He was less troubled during the night and his appetite improves. Continue the same medicines

Sept. 4th His bowels have gradually regained their tone; he has now two or three stools during the twenty four hours in colour &c natural. The last named medicines have been occasionally administered, but I omit them all to day. —

Case 4th In which no evacuating medicine was used.

John Barry aged 6 months. "I found him" says one of my colleagues to whom I am indebted for several of these cases, "labouring under the severest symptoms of Cholera. He had recovered from two attacks of this disease since July; he was sieyed with the present paroxysm last night, had high fever, and vomiting & purging of green matter; he has vomited often to day and purged constantly. He cries, draws up his knees to his breast, the abdominal muscles contract spasmodically and in knots;x his skin is very hot & dry, his pulse quick & rapid. His bowels have been most thoroughly

x This is also noticed by Sydenham (page 203) in violent cases.

evacuated, so that purgatives are not here indicated. With a view to determine to the surface and thus relieve the abdominal irritation I ordered him to be placed into a bath of hot water into which I threw a handful of muriate of soda and as much powdered mustard & Cayenne pepper. As soon as a full rubefacient effect was discoverable I had him removed, wiped dry and covered up in warm dry flannel, and ℥j of the following mixture given every half hour. ℞. Vin. Ipecac ℥VI, Tinct: opii Camph ℥iij mucilag: ℔ss arab: ℥V. m. ℞. Epispas. to vert. ℞ Sinapis: to Epigastrium.

The next morning he was quite easy, and the purging moderated. Repeat the warm bath and continue the above mixture.

7 O.C.P.M. He has remained quiet and easy during the day, but the hot fever and vomiting with great pain in the abdomen have returned; he screams violently and his head is very hot. ℞. ol: Ricin: ℥j Tinct: opii gtt VI q: quart. hor: ℞. mucilag: ℔j arab: ℥ss Tinct. opii gtt XV. to inject. ℞ Sinapism to extend from the scrobiculus cordis to the pubis. The remedies were followed by the happiest effect, much relief was obtained during the night, but I had the mortification next morning to find the disease still unabated; his skin was very hot & dry, his pulse very quick and the stools very frequent. He was again immersed in the "irritating bath" and kept there for ten minutes, then wrapped in flannel and hot bricks applied to his feet, giving internally ℥j of the following diaphoretic mixture every half hour. ℞. Spt.

Nitr. Dulc: ℥ij, Vin. antimon: ℥ss, Tinct. opii ℥ss Mucilag: ℥ss mf.
At 2 o.c. P.M. he had sweated profusely, and was much relieved. The bath was repeated at night, and he escaped the paroxysm. The next day his bowel complaint was almost relieved; the skin quite natural, the pulse much less frequent and quick, the stools were yet greenish. Nothing more was ordered him, but a simple cretaceous julep and the warm bath every evening. His bowels gradually returned to their healthy state and in a few days he was quite restored." —

Cases of Dissection.

I have already so far transgressed the limits to which it was intended to extend this essay that I fear the patience of my reader is well nigh exhausted; I will therefore very briefly mention the more striking symptoms previous to death.-

Augt. 25th. Frederica Pistorius aged 16 months, had not long since been taken from the breast; she was first attacked with Cholera Infantum about a fortnight ago. The urgent symptoms have several times been removed, but from being confined in a crowded nursery, containing 37 children she has as often relapsed. She came under my care for the first time this day; is considerably emaciated, very inanimate, appears not to notice those around her. The head, chest and abdomen are very hot, extremities cold, pulse frequent and irritated; gums very sore, several teeth just emerged from the alveoli; tongue ulcerated in several spots and covered with a white scurf as in rash. The nurse informs me that the stools are

very frequent, of dark, green matter. She has not vomited for several days; will take no nourishment.

The warm bath, flannel roller, Calomel to change the nature of the stools and a demulcent drink were the remedies resorted to. The next morning I found her apparently in articulo mortis, her breathing laboured, the cornea overspread with a pellucid fluid, the pupils enormously dilated, the iris scarcely perceptible, extremeties very cold. I had her placed into the hot bath when she immediately revived, but my hopes were quickly dissipated, the vital spark glimmered but for a moment then sunk never again to be rekindled.

In the examination of the body the appearances were noted as they presented.

Upon opening the abdomen I discovered no very striking marks of disease; the cavity uncommonly dry. The small intestines of a pale colour moderately distended with flatus. The lower portion of Ileum contains a small quantity of thick matter of a pale yellow colour void of feculent smell; this matter becomes of a deeper yellow in approaching the duodenum, viscid, adhering to the valvulæ conniventes. It exists in the duodenum also in more sparing quantity. Two lumbrici are found in Jejunum. Large intestines completely empty, scarcely the natural moisture of the villous coat is present; a few red spots in various parts. Two lumbrici in Colon. Stomach is contracted, no external inflam-

mation discoverable; contains ℥ss light coloured fluid, internally the strongest marks of inflammation and irritation are presented, the villous coat is of a deep red or purplish colour; this inflammation is confined exclusively to the stomach; to my surprise the duodenum is perfectly free of it. The liver entirely natural in colour, of uniform texture and not increased in size. The gall bladder contains a quantity of dark, thick and viscid bile. Spleen and pancreas natural, as also the contents of the thorax. After sawing through the cranium we experienced much difficulty in separating the dura mater from the internal table on account of the strong adhesion. Coagulated lymph deposited on the surface of the dura mater; the vessels of the pia mater tingid. The ventricles contain about ℥ij of bloody serum.

Case 2nd a black child aged two years-

The disease had existed twelve days. Calomel, the warm bath, blisters and stimulants had been administered, but in vain. Appearance on dissection. All the viscera of the abdomen perfectly divested of adipose matter; the small intestines pale, flaccid and contracted, adhering together. About ℥iij of dark, coffee coloured fluid loose in the cavity of the abdomen. Large intestines distended with flatus. Upon opening the small intestines found their upper track coloured with orange yellow bile; the duodenum is tinged with the same. The Ileum entirely empty and colourless. In the large intestines a small quantity of light yellow fluid, mixed with pieces of solid

substance resembling bark. The lower portion slightly inflamed. In the stomach a small quantity of brown fluid exactly similar to that found in the abdomen; the villous coat appears absorbed in several places; near the Cardiac orifice posteriorly two small holes were found, the stomach about this part is thin and diaphanous, tearing from very little force. The liver perfectly natural in every respect; the Gall bladder contains olive coloured bile not unlike that found in the duodenum; the pilorus is perfectly clean & free of this, an evident demarcation between the stomach and duodenum. The head of this patient was not examined.

Case 3rd a black child aged 19 months.

The disease was of sixteen days' duration; after three relapses he fell a victim to its violence. Thirty six hours before death we entertained hopes of his recovery.

In this case we find the small intestines soft & flaccid, externally exhibiting marks of inflammation in various portions; the mesenteric glands somewhat enlarged and inflamed. The liver of a light pale colour, enormously enlarged, extending down to the umbilicus and over to the spleen on the left. Pancreas and Spleen natural. Laying open the intestinal tube we observe in the Jejunum a small quantity of yellow viscid matter, small masses of a deep green colour and solid consistence being interspersed throughout the canal. In the whole track there are spots highly inflamed and almost gangrenous. The

large intestines entirely empty, the rugæ of the rectum slightly inflamed and thickened. The stomach contains a very small quantity of light fluid, the villous coat inflamed in spots, though not so much as in the foregoing cases. The duodenum highly inflamed, containing no bile but about ℥ss of light coloured mucus. The Gall bladder contains thin transparent bile much lighter coloured than natural. On the surface of the brain much coagulatio lymph; vessels distended, and about ℥j serum in the ventricles.

In concluding this essay I cannot refrain expressing the conviction of my inability to do justice to so important and interesting a subject. I have with great diffidence ventured to differ in some inconsiderable points from long established opinions. I ought perhaps to offer an apology for the simplicity of style in which these observations have been made; 'tis true the objects represented often prompted to the expression of sensibility and sympathy for their sufferings, but I aspire not to the reputation of an author but of an humble adherent to truth.–